Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A tunable oscillator comprising:

a control supply configured to output ~~outputting~~ a control output operable to tune ~~for tuning~~ the tunable oscillator;

an oscillator circuit configured to output a signal such that ~~outputting~~ a frequency of the signal ~~which~~ increases with increasing control output;

a control circuit configured to control ~~controlling~~ the frequency of the oscillator circuit signal in response to a comparison of ~~an~~ the oscillator circuit signal with a reference signal; and

a propagation delay compensation circuit configured to vary ~~for varying the~~ an amplitude of the reference signal at substantially the same frequency as the oscillator circuit signal to compensate for propagation delay of signals from the control circuit to the oscillator circuit.

Claim 2 (original) The tunable oscillator of Claim 1, wherein the control supply is a current controlled oscillator and the control output is a control current.

Claim 3 (currently amended) The tunable oscillator of Claim 1, wherein the oscillator circuit comprises at least one capacitor configured to be charged and discharged in response to a comparison of a voltage of the capacitor with the reference signal.

Claim 4 (currently amended) The tunable oscillator of Claim 1, wherein the oscillator circuit comprises two capacitors configured to be alternatively charged and discharged in response to a comparison of ~~the~~ voltages of the capacitors with the reference signal.

Claim 5 (currently amended) The tunable oscillator of Claim 4, wherein the control circuit comprises two comparators configured to ~~for~~ alternatively charge and discharge ~~charging and discharging~~ the two capacitors in response to comparisons of voltages of the capacitors with the reference signal.

Claim 6 (currently amended) The tunable oscillator of Claim 1, further comprising first and second reference voltages configured to control ~~controlling the~~ an amplitude of a reference voltage output by the propagation delay compensation circuit.

Claim 7 (currently amended) The tunable oscillator of Claim 1, wherein the propagation delay compensation circuit is configured ~~oscillates~~ to vary the amplitude of the reference signal by oscillating such that ~~to produce~~ a signal is produced that is ~~rising and falling~~ in phase with the signal output ~~of~~ by the oscillator circuit.

Claim 8 (currently amended) The tunable oscillator of Claim 1, wherein the propagation delay compensation circuit is configured to decrease ~~decreases~~ the amplitude of the reference signal as the control output increases and to increase ~~increases~~ the amplitude of the reference signal as the control output decreases.

Claim 9 (original) The tunable oscillator of Claim 2, wherein the amplitude of the reference signal decreases as the control current increases over a range of values and to increase as the control current decreases over the range of values so that a capacitor of the oscillator circuit charges to substantially the same voltage peak over the range of values.

Claim 10 (currently amended) A method for compensating the propagation delay in a tunable oscillator comprising the steps of:

inputting a control current to an oscillator circuit, the control current being operable to tune ~~for tuning~~ the tunable oscillator;

detecting a signal of the oscillator circuit and comparing the signal to a reference signal from a reference circuit to produce a control signal;

supplying the control signal to both the oscillator and the reference circuit; and

outputting from the reference circuit the reference signal, the reference signal having substantially the same phase as the signal of the oscillator circuit and decreasing in amplitude as the signal of the oscillator circuit increases.

Claim 11 (new) The method of Claim 10, wherein the oscillator circuit comprises at least one capacitor, and wherein the method further comprises charging and discharging the at least one capacitor in response to a comparison of a voltage of the capacitor with the reference signal.

Claim 12 (new) The method of Claim 10, wherein the oscillator circuit comprises two capacitors, and wherein the method further comprises alternatively charging and discharging the two capacitors in response to a comparison of voltages of the two capacitors with the reference signal.

Claim 13 (new) The method of Claim 12, wherein the detecting a signal of the oscillator circuit step further comprises:

detecting the signal of the oscillator circuit using a control circuit, the control circuit comprising two comparators; and

using the two comparators to alternatively charge and discharge the two capacitors corresponding to comparisons of voltages of the capacitors with the reference signal.

Claim 14 (new) The method of Claim 10, wherein the outputting from the reference circuit the reference signal step further comprises:

varying the amplitude of the reference signal at substantially the same frequency as the oscillator circuit signal in a propagation delay compensation circuit.

Claim 15 (new) The method of Claim 14, further comprising:

inputting a first and second reference voltage to the propagation delay compensation circuit;

controlling the amplitude of the reference signal corresponding to the first and second reference voltages in the propagation delay compensation circuit.

Claim 16 (new) The method of Claim 14, further comprising:

oscillating the propagation delay compensation circuit to vary the amplitude of the reference signal.

Claim 17 (new) The method of Claim 14, further comprising:

using the propagation delay compensation circuit to decrease the amplitude of the reference signal as the control current increases and increasing the amplitude of the reference signal as the control current decreases.

Claim 18 (new) A tunable oscillator comprising:

a control supply configured to output a control current operable to tune the tunable oscillator;

an oscillator circuit configured to output a signal such that a frequency of the signal increases with increasing control current;

a control circuit configured to control the frequency of the oscillator circuit signal in response to a comparison of the oscillator circuit signal with a reference signal; and

a propagation delay compensation circuit configured to output a variable reference signal such that the reference signal has substantially the same phase as the oscillator circuit signal and decreases in amplitude as the signal of the oscillator circuit increases.

Claim 19 (new) The tunable oscillator of Claim 18, wherein the oscillator circuit comprises two capacitors configured to be alternatively charged and discharged in response to a comparison of voltages of the capacitors with the reference signal.

Claim 20 (new) The tunable oscillator of Claim 19, wherein the control circuit comprises two comparators configured to alternatively charge and discharge the two capacitors in response to comparisons of voltages of the capacitors with the reference signal.